

d his

(FILE 'USPAT' ENTERED AT 14:16:29 ON 25 FEB 94)

SET PAGELength 19

SET LINELENGTH 78

L1 19625 S 175/CLAS
L2 7 S AUTOMATIC DRILLING SYSTEM
L3 0 S DRILLING FLUID PRESSURE SENSOR
L4 708 S PRESSURE REGULATOR AND RELAY AND SENSOR
L5 24 S BIT WEIGHT AND TORQUE AND RPM
L6 3 S L1 AND L2
L7 0 S L1 AND L4 AND L5
L8 5 S L1 AND L4
L9 18 S L1 AND L5

25 FEB 94 14:26:01

U.S. Patent & Trademark Office

P0008

L10 0 S L2 AND L4

L11 1 S L2 AND L5

=> d 12 1-7

1. 5,220,963, Jun. 22, 1993, System for controlled drilling of boreholes along planned profile; Bob J. Patton, 175/24, 27, 45, 61 [IMAGE AVAILABLE]

2. 5,197,018, Mar. 23, 1993, Apparatus and method for drill wear prediction; Sang G. Oh, 364/508, 474.17, 554 [IMAGE AVAILABLE]

3. 4,875,530, Oct. 24, 1989, **Automatic drilling system**; Tommy S. Frink, et al., 175/27; 254/269, 270, 377 [IMAGE AVAILABLE]

4. 4,453,884, Jun. 12, 1984, Hook rotating mechanism; Howard S. Gudgel, 414/745.2; 175/52; 294/82.15, 86.41, 90; 414/22.51 [IMAGE AVAILABLE]

25 FEB 94 14:26:15

U.S. Patent & Trademark Office

P0009

5. 4,185,378, Jan. 29, 1980, Method for attaching component leads to printed circuit base boards and printed circuit base board advantageously used for working said method; Hideo Machida, 29/839; 174/263; 361/760, 774 [IMAGE AVAILABLE]

6. 4,052,132, Oct. 4, 1977, Method and apparatus for drilling fine holes in frangible workpieces; William L. Oates, 408/1R, 3, 10, 17 [IMAGE AVAILABLE]

7. 3,973,859, Aug. 10, 1976, Automated drilling system; John G. Huber, et al., 408/12, 3, 237; 409/80 [IMAGE AVAILABLE]

=> d 16 1-3

1. 5,220,963, Jun. 22, 1993, System for controlled drilling of boreholes along planned profile; Bob J. Patton, **175/24, 27, 45, 61** [IMAGE AVAILABLE]

25 FEB 94 14:26:34

U.S. Patent & Trademark Office

P0010

2. 4,875,530, Oct. 24, 1989, **Automatic drilling system**; Tommy S. Frink, et al., **175/27**; 254/269, 270, 377 [IMAGE AVAILABLE]

3. 4,453,884, Jun. 12, 1984, Hook rotating mechanism; Howard S. Gudgel, 414/745.2; **175/52**; 294/82.15, 86.41, 90; 414/22.51 [IMAGE AVAILABLE]

=> d 18 1-5

1. 4,565,086, Jan. 21, 1986, Method and apparatus for detecting entrained

gases in fluids; Raymond T. Orr, Jr., 73/19.09; 175/40, 66; 436/30
[IMAGE AVAILABLE]

2. 4,042,123, Aug. 16, 1977, Automated pipe handling system; Loren B. Sheldon, et al., 414/22.71; 175/83; 211/70.4 [IMAGE AVAILABLE]

3. 3,917,230, Nov. 4, 1975, Well drilling control system; Charles D. Barron, 254/270; 175/27; 192/51; 254/274, 337, 340, 358, 367, 900, 903 [IMAGE
25 FEB 94 14:27:02 U.S. Patent & Trademark Office P0011
AVAILABLE]

4. 3,827,511, Aug. 6, 1974, APPARATUS FOR CONTROLLING WELL PRESSURE; Marvin R. Jones, 175/25; 166/75.1 [IMAGE AVAILABLE]

5. 3,595,075, Jul. 27, 1971, METHOD AND APPARATUS FOR SENSING DOWNHOLE WELL CONDITIONS IN A WELLBORE; Ethell J. Dower, 73/155; 175/48 [IMAGE
AVAILABLE]

=> d 111

1. 4,875,530, Oct. 24, 1989, Automatic drilling system; Tommy S. Frink, et al., 175/27; 254/269, 270, 377 [IMAGE AVAILABLE]

=>